

PLUMBING SYMBOLS AND ABBREVIATIONS

NOTE: SYMBOLS AND ABBREVIATIONS INDICATED HERE AND NOT USED IN THE CONTRACT DOCUMENTS DO NOT APPLY TO THIS PROJECT. ADDITIONAL SYMBOLS MAY BE INDICATED IN THE CONTRACT DOCUMENTS.

PIPE FITTINGS			
	FLANGE		ELBOW DOWN
	UNION		ELBOW UP
	ANCHOR		TEE DOWN
	PIPE GUIDE		TEE UP
	PIPE SLEEVE		PIPE CAP
	ECCENTRIC REDUCER		SOIL, STORM, OR WASTE PLUG
	CONCENTRIC REDUCER		

PIPE VALVES AND SPECIALTIES			
	GAS SHUT OFF VALVE		PIPE FLEXIBLE CONNECTION
	GATE VALVE		EXPANSION JOINT
	DIAPHRAGM VALVE		FLOW SENSING DEVICE
	BALL VALVE		PRESSURE OR VACUUM SWITCH
	BUTTERFLY VALVE		HEAT TRACE TERMINATION POINT
	BALANCING VALVE		HEAT TRACE POWER CONNECTION POINT
	CHECK VALVE		THERMOMETER
	PRESSURE REDUCING VALVE		PRESSURE GAUGE (WITH VALVE)
	SOLENOID VALVE		WALL HYDRANT
	PRESSURE RELIEF VALVE		HOSE BIBB
	THERMOSTATIC MIXING VALVE		SLIDE-OXYGEN OR VACUUM BOTTLE GAS OUTLET
	TEMPERATURE BLENDING VALVE		BACKWATER VALVE

	REDUCED PRESSURE BACKFLOW PREVENTER		GAS TERMINAL
	DOUBLE CHECK BACKFLOW PREVENTER		FILTER
	PIPELINE STRAINER		DIRECTION OF PITCH
	MECHANICAL SHOCKSTOP		WATER METER
	ZONE VALVE BOX LABEL IS SHOWN ON FRONT OF VALVE BOX TO INDICATE ORIENTATION		DEMOLITION OF PIPING, DEVICE, ETC.

DRAINS AND CLEANOUTS			
	FLOOR DRAIN/FLOOR SINK		FIXTURE WASTE TRAP
	ROOF DRAIN		CLEANOUT
	HUB DRAIN		FLOOR CLEANOUT

FIXTURE INSTALLATION		
FIXTURE	BARRIER FREE DESIGN	NON-BARRIER FREE
WATER CLOSET	FLOOR TO RIM 17"	FLOOR TO RIM 15"
URINAL	FLOOR TO RIM 17" MIN. ONE PER ROOM	FLOOR TO RIM 24"
LAVATORY	FLOOR TO RIM 34" MAX. FLOOR TO UNDER APRON 29"	FLOOR TO RIM 31"
DRINKING FOUNTAIN	FLOOR TO SPOUT 36" MAX. FLOOR TO UNDER APRON 27"	FLOOR TO RIM 40"
SHOWER VALVE	FLOOR TO VALVE 42"	FLOOR TO VALVE 48"
SHOWER HEAD	FLOOR TO HEAD 60" ON HOSE ADJ. 48"	FLOOR TO HEAD 78" VARIES

PIPING SYSTEM LABELS			
NEW	EXISTING	NEW	EXISTING
—DCW—	—XDCW—	—SAN—	—XSAN—
DHW	XDHW	SD	XSD
DHR	XDHR	S	XS
CS	XCS	OD	XOD
HT	XHT	FM	XFM
NP	XNP	CWW	XCWW
DI	XDI	IW	XIW
ROS	XROS	LW	XLW
ROR	XROR	PW	XPW
PW	XPW	V	XV
PCW	PCW	CWW	XCWW
PHW	XPHW	PV	XPV
PHR	XPHR	LV	XLV
LCW	XLW	VC	XVC
LHW	XLHW	H2	XH2
LHR	XLHR	O2	XO2
TF	XTF	N2	XN2
WGE	XWGE	N2H	XN2H
LA	XLA	NG	XNG
MA	XMA		
CA	XCA		
LVAC	XLVAC		
MV	XMV		
TW	XTW		
NPCS	XNPCS		

CIVIL UTILITIES SYSTEMS			
NEW	EXISTING	NEW	EXISTING
—W—	—XW—		
SAN	XSAN	PIV	XPIV
STM	XSTM		
FM	XFM		
F	XF		

REFERENCE SYMBOLS			
	GENERAL REFERENCE DESIGNATES SHEET NUMBER		EQUIPMENT NAME AND NUMBER
	DETAIL REFERENCE TOP DESIGNATES DETAIL NUMBER BOTTOM DESIGNATES SHEET NUMBER		LAB EQUIPMENT NUMBER
	SECTION REFERENCE TOP DESIGNATES SECTION NUMBER BOTTOM DESIGNATES SHEET NUMBER		REVISION NUMBER
			CONSTRUCTION BULLETIN NUMBER

	ELEVATION SYMBOL
	NEW CONNECTION TO EXISTING

ABBREVIATIONS			
A	AIR	MAP	MASTER ALARM PANEL
AAP	AREA ALARM PANEL	MAX	MAXIMUM
ACC	ACCESS	MB	MOP BASIN
ACFM	ACTUAL CUBIC FEET PER MINUTE	MBH	ONE THOUSAND BTUH
ADB	ACID DILUTION BASIN	MEZZ	MEZZANINE
ADJ	ADJUSTABLE	MFR	MANUFACTURER
AFF	ABOVE FINISHED FLOOR	MH	MANHOLE
ALT	ALTERNATE	MN	MINIMUM/MINUTE
AMPS	AMPERES	MISC	MISCELLANEOUS
AP	ACCESS PANEL	MTD	MOUNTED
APPROX	APPROXIMATE	MTG	MOUNTING
ARCH	ARCHITECTURAL	NC	NORMALLY CLOSED
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS	NIC	NOT IN CONTRACT
ASSY	ASSEMBLY	NO	NUMBER
BHP	BRAKE HORSEPOWER	NOM	NOMINAL
BLDG	BUILDING	NPSH	NET POSITIVE SUCTION HEAD
BOP	BOTTOM OF PIPE ELEVATION	NPT	NATIONAL PIPE THREAD
BOT	BOTTOM	NTS	NOT TO SCALE
BT	BATHTUB		
BTU	BRITISH THERMAL UNIT	OC	ON CENTER
BTUH	BRITISH THERMAL UNITS PER HOUR	OD	OUTSIDE DIAMETER/OVERFLOW DRAIN
BTWN	BETWEEN	OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
		OFDI	OWNER FURNISHED OWNER INSTALLED
CA	COMPRESSED AIR	P	PUMP
CFGI	CONTRACTOR FURNISHED CONTRACTOR INSTALLED	PH	PHASE
CFM	CUBIC FEET PER MINUTE	PV	POST INDICATOR VALVE
CLG	CEILING	PLBG	PLUMBING
CMU	CONCRETE MASONRY UNIT	PRESS	PRESSURE
CO	CLEANOUT	PRV	PRESSURE REDUCING VALVE
CO2	CARBON DIOXIDE	PSF	POUNDS PER SQUARE FOOT
CONN	CONNECTION/CONNECT	PSI	POUNDS PER SQUARE INCH
CONTR	CONTRACTOR	PSIG	POUNDS PER SQUARE INCH GAUGE
CORR	CORRIDOR	PW	PURE WATER
CS	CLINICAL SINK/COLD SOFT WATER		
CTR	CENTER	R	RADIUS
CU	COPPER	RAD	REFRIGERATED AIR DRYER
CRVTR	CORROSIVE VENT THROUGH ROOF	RD	ROOF DRAIN
CWW	CLEARWATER WASTE	REC	RECESSED
		RECP	RECEPTACLE
D	DEPTH/DRAIN LINE	REF	REFERENCE
DCW	DOMESTIC COLD WATER	REQD	REQUIRED
DET	DETAIL	RI	ROUGH-IN
DFU	DRAINAGE FIXTURE UNIT	RPM	REVOLUTIONS PER MINUTE
DHR	DOMESTIC HOT WATER RETURN	RV	RELIEF VALVE
DHW	DOMESTIC HOT WATER	S	STORM
DIA	DIAMETER	SA	MECHANICAL SHOCK ARRESTOR
DMA	DIMENSION	SAN	SANITARY
DISCH	DISCHARGE	SCH	SCHEDULE
DN	DOWN	SCHM	STANDARD CUBIC FEET PER MINUTE
DS	DOWNSPOUT	SD	SUBSOIL DRAIN
DWG	DRAWING	SF	SQUARE FEET
EA	EACH	SH	SHOWER
EEW	EMERGENCY EYEWASH	SHT	SHEET
EFF	EFFICIENCY	SPEC	SPECIFICATION
EJ	EXPANSION JOINT	SQ	SQUARE
ELEC	ELECTRICAL	SR	SERVICE RECEPTOR
ELEV	ELEVATION	SS	STAINLESS STEEL
EQUIP	EQUIPMENT	STD	STANDARD
ET	EXPANSION TANK	STM	STORM
ETR	EXISTING TO REMAIN	STRU	STRUCTURAL/STRUCTURE
ES	EMERGENCY SHOWER	SUCT	SUCTION
EWC	ELECTRIC WATER COOLER		
EWT	ENTERING WATER TEMPERATURE	TD	TRENCH DRAIN
EXP	EXPANSION	TDH	TOTAL DYNAMIC HEAD
EXT	EXTERIOR	TEMP	TEMPERATURE
F	FAHRENHEIT	TMV	THERMOSTATIC MIXING VALVE
FCO	FLOOR CLEANOUT	TOB	TOP OF BEAM
FD	FLOOR DRAIN	TOD	TOP OF DECK
FLA	FULL LOAD AMPERES	TOJ	TOP OF JOIST
FLR	FLOOR	TOS	TOP OF SLAB/TOP OF STEEL
FM	FORCE MAIN	TF	TRAP FILLER
FP	FIREPROOF	TP	TRAP PRIMER
FFM	FEET PER MINUTE	TYP	TYPICAL
FT	FEET	UR	URINAL
FTHD	FEET HEAD	V	VENT / VACUUM / VOLTS
FTG	FOOTING	VAC	VACUUM
G	GAS	VEL	VELOCITY
GA	GAUGE	VFD	VARIABLE FREQUENCY DRIVE
GAL	GALLON	VIB	VALVE-IN-BOX
GALV	GALVANIZED	VOL	VOLUME
GPH	GALLONS PER HOUR	VTR	VENT THRU ROOF
GPM	GALLONS PER MINUTE		
HB	HOSE BIBB	W	WASTEWATER
HD	HUB DRAIN	W/	WITH
HP	HORSEPOWER	W/O	WITHOUT
HR	HOSE REEL	WAGD	WASTE ANESTHETIC GAS DISPOSAL
HT	HEAT TRACE HOT WATER	WC	WATER CLOSET
HTR	HEATER	WCO	WALL CLEANOUT
HVAC	HEATING VENTILATING & AIR CONDITIONING	WGE	WASTE GAS EXHAUST
HZ	HERTZ	WH	WALL HYDRANT
		WSFU	WATER SUPPLY FIXTURE UNIT
ID	INSIDE DIAMETER		
IE	INVERT ELEVATION	X	EXISTING
IN	INCHES	YCO	YARD CLEANOUT
IN WC	INCHES WATER COLUMN		
IW	INDIRECT WASTE	ZVB	ZONE VALVE BOX
KW	KILOWATT		
L	LENGTH		
LA	LABORATORY AIR		
LAV	LAVATORY		
LBS	POUNDS		
LTG	LIGHTING		
LV	LABORATORY VENT		
LWT	LEAVING WATER TEMPERATURE		

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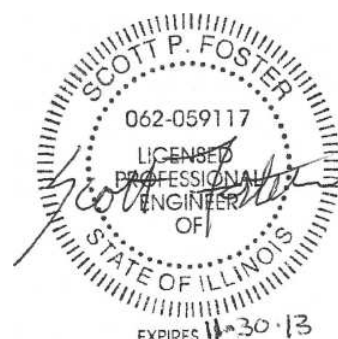
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SEALS AND SIGNATURES



ISSUED FOR CONSTRUCTION 07/03/12

REV. NO. DESCRIPTION BY APVD DATE



FMS
Facilities Management Services

PROJECT TITLE ADVANCED PROTEIN CRYSTALLIZATION FACILITY, ARGONNE NATIONAL LABORATORY

PROJECT NO 08541-00

DRAWING TITLE

PLUMBING SYMBOLS AND ABBREVIATIONS

DESIGNED SAB	A/E CADD FILE P00.00	FACILITY NOIS)
DRAWN JAG	A/E DWG. NO. P00.00	
CHECKED SAB	CAD NO.	
PROJECT MANAGER	DWG STATE	
ANL - JESSE ADAMS DATE - 04/26/11	BND ORDER	
FACILITY DOCUMENT NUMBER J446-101-W-	REV. NO. P00.00	